

IT IS CLAIMED:

1. An isolated synthetic peptide inhibitory of *Staphylococcal* virulence selected from the group consisting of Fmoc-TyrSerPro(modifiedTrp)ThrAsnPhe, wherein the modifiedTrp is an S-phenylthiocarbamate derivative of tryptophan (SEQ ID NO:2);  
 TyrSerPro(modifiedTrp)ThrAsnPhe, wherein the modifiedTrp is an S-phenylthiocarbamate derivative of tryptophan (SEQ ID NO:3); Fmoc-TyrSerPro(modifiedTrp)ThrAsnPhe, wherein the modifiedTrp has a BOC group linked to the ring nitrogen (SEQ ID NO:4); Fmoc-TyrSerPro(modifiedTrp), wherein the modifiedTrp is a phenylthiocarbamate derivative of tryptophan (SEQ ID NO:5); Fmoc-TyrSerPro(modifiedTrp), wherein the modifiedTrp has a BOC group linked to the ring nitrogen (SEQ ID NO:6).

2. The peptide of claim 1, having the sequence presented as Fmoc-TyrSerPro(modifiedTrp)ThrAsnPhe (SEQ ID NO:2), wherein modifiedTrp is an S-phenylthiocarbamate derivative of tryptophan and Fmoc is linked to the N-terminal  $\alpha$ -amino group.

3. A pharmaceutical composition comprising the isolated synthetic peptide of Claim 2 and a pharmaceutically acceptable carrier.

4. A method of preventing or treating *Staphylococcus* infection in a subject, comprising: administering to the subject a therapeutically effective amount of an isolated synthetic peptide according to Claim 1.

5. The method according to claim 4, where said peptide has the sequence presented as Fmoc-TyrSerPro(modifiedTrp)ThrAsnPhe (SEQ ID NO:2), wherein said modifiedTrp is an S-phenylthiocarbamate derivative of tryptophan and Fmoc is linked to the N-terminal  $\alpha$ -amino group.

6. A method of preventing or treating a *Staphylococcus* infection in a subject, comprising:

administering to the subject a therapeutically effective amount of an isolated synthetic amino acid inhibitory of *Staphylococcal* virulence of the structure, (Fmoc)NH-CHR-COOH, wherein Fmoc is a 9-fluorenylmethoxycarbonyl group and R is a non-polar side chain.

7. The method according to Claim 6, wherein said isolated synthetic amino acid is selected from the group consisting of Fmoc-L-Trp(Boc)-OH, Fmoc-D-Trp(Boc)-OH, Fmoc-2-aminobenzoic acid, Fmoc-1-amine-cyclohexane carboxylic acid, (R,S)-Fmoc-3-amino-1-cyclohexane carboxylic acid, Fmoc-D-tetrahydroisoquinoline-1-carboxylic acid, Fmoc-4-bromo-L-phenylalanine, Fmoc-4-chloro-L-phenylalanine, Fmoc-5-phenyl-pyrrolidine-2-carboxylic acid, (R)-Fmoc-4-amino-5-phenyl-pentanoic acid, Fmoc-L-His(Trt)-OH, Fmoc-L-1,2,3,4-tetrahydronorharman-3-carboxylic acid, Fmoc-2-L-styrylalanine, Fmoc-2-L-Lys(Z)-OH, Fmoc-4-methyl-L-phenylalanine and Fmoc-L-Leu-OH.

8. The method according to Claim 7, wherein said isolated synthetic amino acid is Fmoc-Trp(Boc)-OH (FTB), wherein modifiedTrp has a BOC group linked to the ring nitrogen.

9. The method according to Claim 4 or 6, further comprising administering an antibiotic to said subject.

10. The method according to Claim 9, wherein said antibiotic is methicillin or vancomycin

11. The method according to Claim 4 or 6, where said *Staphylococcus* is antibiotic-resistant.

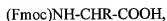
12. The method according to Claim 11, where said *Staphylococcus* is methicillin-resistant.

13. The method according to Claim 11, where said *Staphylococcus* is vancomycin-resistant.

14. A method of preventing a bacterial infection associated with the use of a medical device comprising integrating the isolated synthetic peptide inhibitory of *Staphylococcal* virulence according to Claim 1 with said device and delivering said peptide-containing device to a patient.

15. The method according to Claim 14, where said peptide has the sequence presented as Fmoc-TyrSerPro(modifiedTrp)ThrAsnPhe (SEQ ID NO:2), wherein modifiedTrp is an S-phenylthiocarbamate derivative of tryptophan and Fmoc is linked to the N-terminal  $\alpha$ -amino group.

16. A method of preventing a bacterial infection associated with the use of a medical device comprising integrating an isolated synthetic amino acid inhibitory of *Staphylococcal* virulence of the structure,



wherein Fmoc is a 9-fluorenylmethoxycarbonyl group and R is a non-polar side chain and delivering said amino acid-containing device to the patient.

17. The method according to Claim 16, wherein said isolated synthetic amino acid is selected from the group consisting of Fmoc-L-Trp(Boc)-OH, Fmoc-D-Trp(Boc)-OH, FMoc-2-aminobenzoic acid, Fmoc-1-amine-cyclohexane carboxylic acid, (R,S)-Fmoc-3-amino-1-cyclohexane carboxylic acid, Fmoc-D-tetrahydroisoquinoline-1-carboxylic acid, Fmoc-4-bromo-L-phenylalanine, Fmoc-4-chloro-L-phenylalanine, Fmoc-5-phenyl-pyrrolidine-2-carboxylic acid, (R)-Fmoc-4-amino-5-phenyl-pentanoic acid, Fmoc-L-His(Trt)-OH, Fmoc-L-1,2,3,4-tetrahydronorharman-3-carboxylic acid, FMoc-2-L-styrylalanine, FMoc-2-L-Lys(Z)-OH, Fmoc-4-methyl-L-phenylalanine and Fmoc-L-Leu-OH.